



International Civil Aviation Organization

NORTH AMERICAN, CENTRAL AMERICAN AND CARIBBEAN OFFICE

**First Meeting of the North Atlantic/Caribbean ATS Routes Working Group
(NAT/CAR WG/1)**

Miami, Florida, USA, 19-21 September 2006

NAT/CAR WG/1 - WP/05

11/09/06

Agenda Item 2: Review WATRS Airspace Organization and Management

AIRSPACE TRAFFIC FLOW AND AIRCRAFT EQUIPAGE STUDIES

(Presented by the United States)

SUMMARY

The attached material summarizes the results of FAA studies of traffic flows and aircraft equipage in WATRS Plus airspace.

1. Introduction

1.1 The attached material presented in the **Appendix** to this working paper, summarizes the results of FAA studies of traffic flows and aircraft equipage in WATRS Plus airspace. It will be briefed and discussed in detail under this Agenda Item.

2. Suggested Action

2.1 The meeting is invited to review the Appendix with the material in preparation for Agenda Item 2 discussions.

APPENDIX

Summary of WATRS Plus Know Your Airspace (KYA) Analysis

- Prepared by CSSI for Separation Standards Analysis Group at FAA Technical Center
- Provides basic information for airspace planners, separation analysts and decision makers.

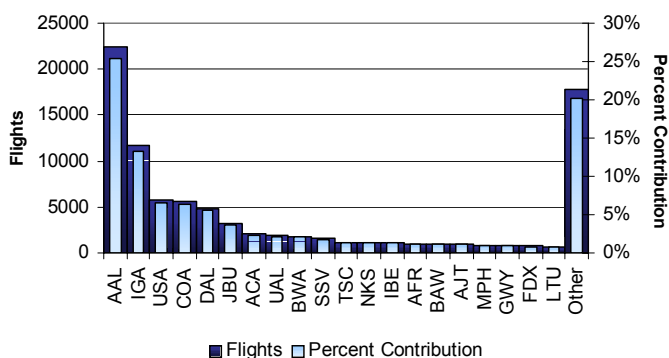
Content Highlights

Data Collection and Processing

- 105-day traffic sample (1 Dec 2005 to 15 March 2006)
- Data derived from Enhanced Traffic Management System (ETMS)
- ETMS collects data from various sources: scheduled flight messages, NAS messages, DOTS, Estimated Departure Clearance Time and flight substitution messages

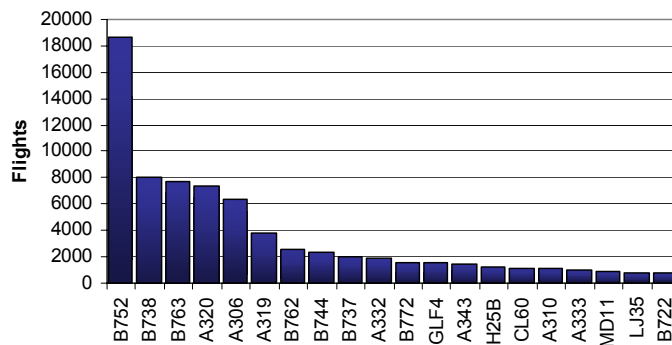
Top 20 Operators

- Top 20 operators conduct 80% of flights.
- Remaining 20% of the flights in the airspace were attributed to 336 operators collectively identified as “Other”
- 98 of the total 356 operators observed (27.5%) conducted only 1 or 2 flights during the 105-day sample period.
- Most frequent operator conducts approx. 25% of the flights.
- IGA conducts approx. 13% of the flights



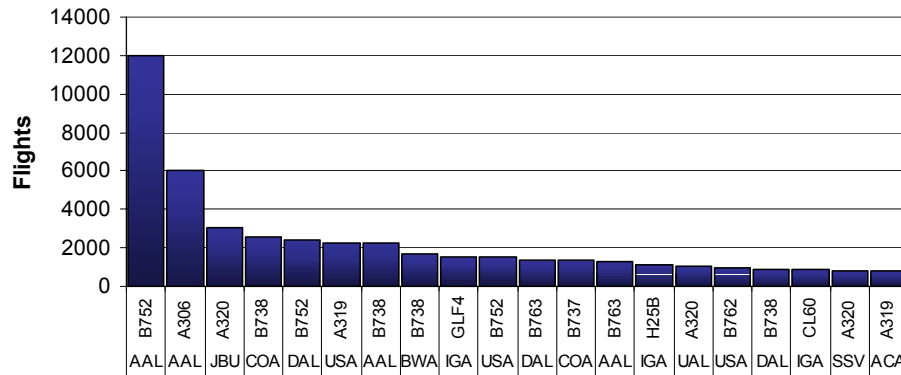
Top 20 Aircraft Types

- Top 20 aircraft types account for 82% of flights
- 280 aircraft types observed.



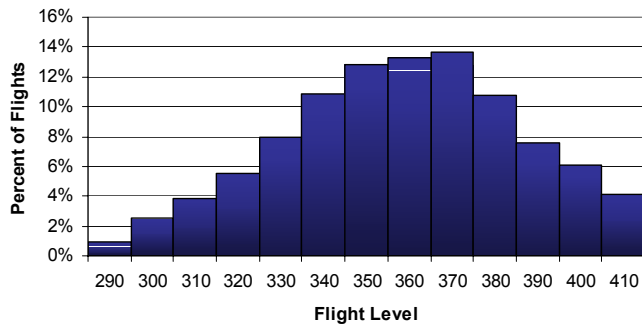
Top 20 Operator/Aircraft Type Combinations

The top 20 operator/aircraft type combinations represent approximately 52% of the operations.



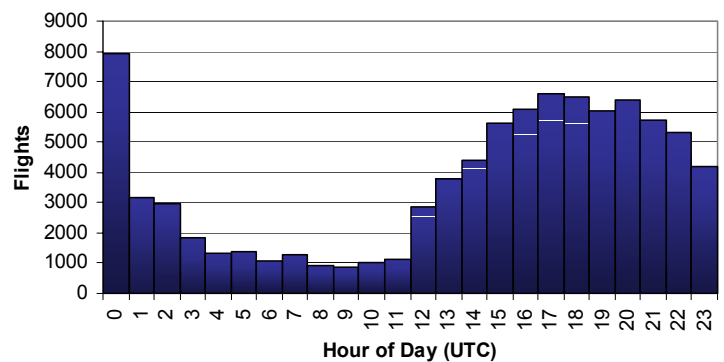
Flight Level Utilization

The flight levels with the highest concentration of traffic, 350,360 and 370, account for approximately 40% of the operations in the traffic sample.



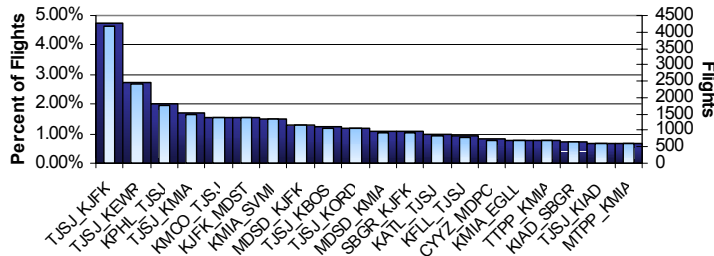
WATRS Plus Entry Time Distribution

The highest concentration of traffic occurs between 1400 coordinated universal time (UTC) and 0100 UTC. The 1400 to 0100 UTC time block represents 68% of the total traffic.

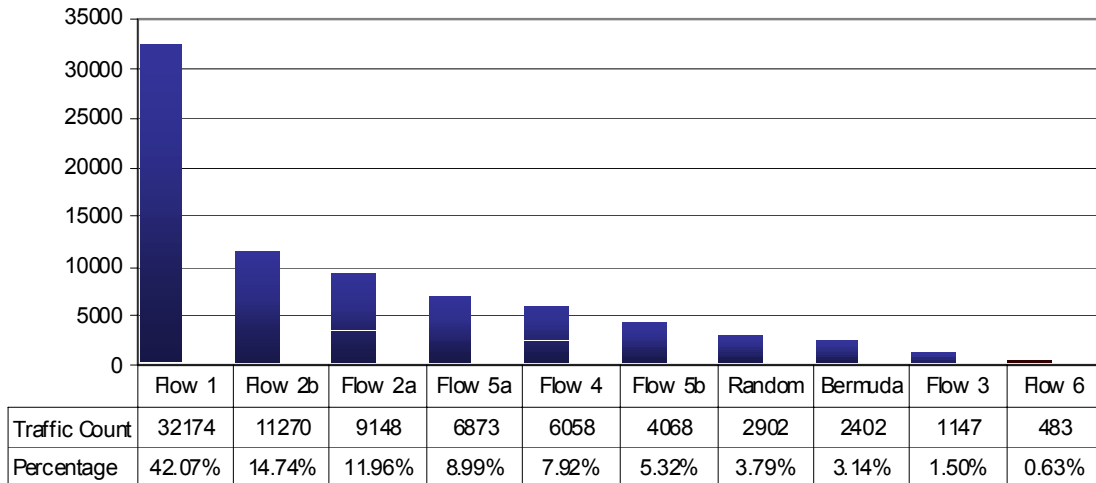


Top 20 City Pairs

- The top 20 city pairs, which represent approximately 28% of the operations.
- San Juan Luis Munoz Marin Airport to New York John F. Kennedy Airport is the most flown city pair contributing 5% of the traffic.

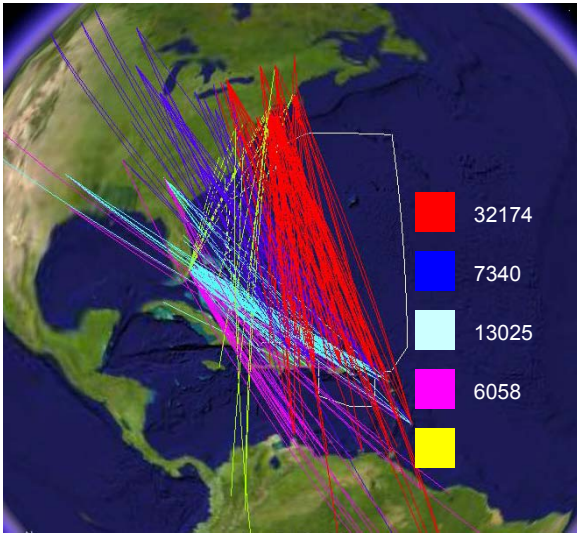


Flow Analysis

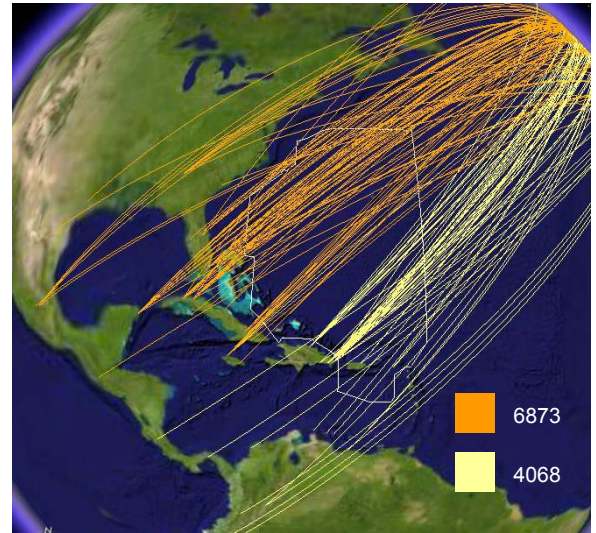


Flow	Description	Traffic Count	Percent Contribution	City Pairs
Flow 1	North America, Northeast to East Caribbean and South America	32174	42%	145
Flow 2b	Florida Plus to East Caribbean	11270	15%	66
Flow 2a	North America, Central to East Caribbean	9148	12%	73
Flow 5a	North Europe to Florida/West Caribbean	6873	9%	90
Flow 4	Florida Plus to South America	6058	8%	36
Flow 5b	Europe to East Caribbean	4068	5.3%	63
Random	Random	2902	4%	52
Bermuda	Bermuda	2402	3%	22
Flow 3	North America, North to Central to West Caribbean/Florida	1147	1.5%	23
Flow 6	North America to Africa	483	.63%	4

**Overview of the Traffic Flow between
North America and the Caribbean/South
American Regions**



**Overview of the Traffic Flow between
Europe and the Caribbean/South
American Regions**



Flow Analysis Continued



Flow 1



Flow 2a



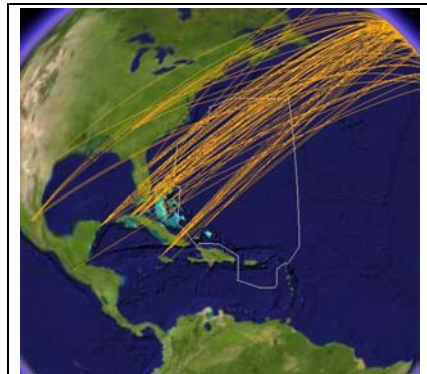
Flow 2b



Flow 3



Flow 4



Flow 5a



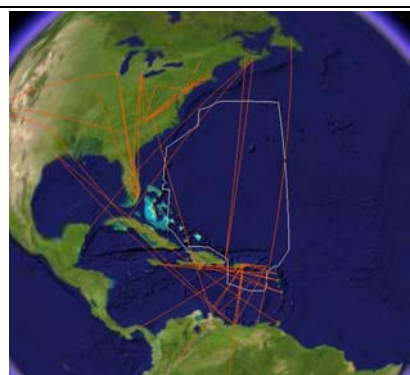
Flow 5b



Flow 6



Bermuda



Random

Operator Survey

- Survey of aircraft type and long range navigation equipage capability was submitted to top 40 operators.
- Nineteen positive responses received to date, two negative.
- IATA 6/06 nav. and comm. equipment survey data from nine additional operators (common to both surveys) also incorporated into analysis.
- Data indicates greatest preponderance of WATRS Plus large transport aircraft are adequately equipped for application of reduced separation standards.
- Additional responses to survey anticipated.
- Coordination underway with NBAA to survey their membership also.